

WHAT IS CLAIMED IS:

1. An apparatus processing a semiconductor wafer arranged in a chamber having an inlet introducing a fluid and an outlet exhausting said fluid, the apparatus comprising:

- 5 a detection portion detecting humidity in said chamber; and
 a control portion controlling a humidity adjustment device in accordance with the humidity detected by said detection portion.

2. The apparatus according to claim 1, wherein said control portion calculates said detected humidity as an instruction value for said humidity adjustment device and in accordance with said instruction value controls said humidity adjustment device.

3. The apparatus according to claim 1, wherein:
said detection portion detects temperature and humidity in said chamber; and

- 5 said control portion calculates said detected temperature and humidity as an instruction value for said temperature and humidity adjustment device and in accordance with said instruction value controls said temperature and humidity adjustment device.

4. An apparatus processing a semiconductor wafer arranged in a chamber, said apparatus being provided with a plurality of heaters controllable in temperature for each of a plurality of sections of a surface bearing said wafer, said apparatus comprising:

- 5 a measurement portion measuring a dimension of a pattern of a processed wafer in said apparatus, as correlated to said section;
 a detection portion detecting temperature in a vicinity of each said heater;
 a calculation portion calculating a temperature instruction value for
10 said heater of each said section from said dimension of said pattern correlated to said section measured by said measurement portion; and

a control portion controlling said heater of each said section to allow said detected temperature to attain said calculated temperature instruction value.

5 5. The apparatus according to claim 4, further comprising a storage portion previously storing a temperature table indicating a variation in dimension of a pattern for a unit temperature of said heater, wherein said calculation portion calculates a variation to allow said measured dimension
of said pattern to attain a target value of said dimension of said pattern and calculates said temperature instruction value from said calculated variation and said stored temperature table.

6. An apparatus processing a semiconductor wafer arranged in a chamber, said apparatus being provided with a plurality of heaters controllable in temperature for each of a plurality of sections of a surface bearing said wafer, said apparatus comprising:

5 a receive portion connected to a measurement device to receive from said measurement device a dimension of a pattern of a processed wafer in said apparatus measured by said measurement device, as correlated to said section;

10 a calculation portion calculating a temperature instruction value for a heater of each section from the dimension of the pattern correlated to said section and received from said receive portion and;

a transmit portion transmitting said temperature instruction value to a temperature processing device controlling a temperature in a vicinity of said heater to attain said calculated temperature instruction value.

7. An apparatus processing a semiconductor wafer arranged in a chamber, there being provided an exposure device arranged at a position opposite said wafer, capable of controlling exposure in amount for each of a plurality of sections, the apparatus comprising:

5 a measurement portion measuring a dimension of a pattern of said wafer processed in said apparatus, as correlated to said section;

a calculation portion calculating an exposure instruction value for each section from the dimension of the pattern measured by said measurement portion, as correlated to said section; and

10 a control portion controlling said exposure in amount for each said section so that said exposure device provides an amount of exposure corresponding to said calculated exposure instruction value.

8. The apparatus according to claim 7, further comprising a storage portion previously storing an exposure table indicating a variation in dimension of a pattern for a unit exposure provided by said exposure device, wherein said calculation portion calculates a variation to allow said
5 measured dimension of said pattern to attain a target value of said dimension of said pattern and calculates said exposure instruction value from said calculated variation and said stored exposure table.

9. An apparatus processing a semiconductor wafer arranged in a chamber, there being provided an exposure device arranged at a position opposite said wafer, capable of controlling exposure in amount for each of a plurality of sections, the apparatus comprising:

5 a receive portion connected to a measurement device to receive from said measurement device a dimension of a pattern of a processed wafer in said apparatus measured by said measurement device, as correlated to said section;

10 a calculation portion calculating an exposure instruction value for a heater of each section from the dimension of the pattern correlated to said section and received from said receive portion; and

a transmit portion transmitting said exposure instruction value to an exposure processing device controlling said exposure in amount to attain said calculated exposure instruction value.

10. An apparatus processing a semiconductor wafer arranged in a chamber having an inlet introducing a fluid and an outlet exhausting said fluid, said apparatus being provided with a plurality of heaters controllable

in temperature for each of a plurality of sections of a surface bearing said
5 wafer, said apparatus comprising:
a first detection portion detecting temperature and humidity in said
chamber;
a first control portion controlling a temperature and humidity
adjustment device in accordance with the temperature and humidity
10 detected by said first detection portion;
a measurement portion measuring a dimension of a pattern of said
wafer processed in said apparatus, as correlated to said section;
a second detection portion detecting temperature in a vicinity of each
said heater;
15 a calculation portion calculating a temperature instruction value for
said heater of each said section from the dimension of the pattern measured
by said measurement portion, as correlated to said section; and
a second control portion controlling said heater of each said section
to allow said detected temperature to attain said calculated temperature
20 instruction value.

11. An apparatus processing a semiconductor wafer arranged in a
chamber having an inlet introducing a fluid and an outlet exhausting said
fluid, there being provided an exposure device arranged at a position
opposite said wafer, capable of controlling exposure in amount for each of a
5 plurality of sections, the apparatus comprising:
a detection portion detecting temperature and humidity in said
chamber;
a first control portion controlling a temperature and humidity
adjustment device in accordance with the temperature and humidity
10 detected by said detection portion;
a measurement portion measuring a dimension of a pattern of said
wafer processed in said apparatus, as correlated to said section;
a calculation portion calculating an exposure instruction value for
each section from the dimension of the pattern measured by said
15 measurement portion, as correlated to said section; and

a second control portion controlling said exposure in amount for each said section to allow exposure by said exposure device to attain said calculated exposure instruction value.

12. The apparatus according to claim 1, corresponding to a photolithography apparatus using a chemically amplified resist.

13. The apparatus according to claim 4, corresponding to a photolithography apparatus using a chemically amplified resist.

14. The apparatus according to claim 6, corresponding to a photolithography apparatus using a chemically amplified resist.

15. The apparatus according to claim 7, corresponding to a photolithography apparatus using a chemically amplified resist.

16. The apparatus according to claim 9, corresponding to a photolithography apparatus using a chemically amplified resist.

17. The apparatus according to claim 10, corresponding to a photolithography apparatus using a chemically amplified resist.

18. The apparatus according to claim 11, corresponding to a photolithography apparatus using a chemically amplified resist.